REMARKS

The Official Action dated June 18, 2003 has been received and carefully noted. The above addition of new claims 36-37 and the following remarks are submitted as a full and complete response thereto.

Claims 36-37 have been added. Upon entry of this Response, claims 1-37 will be pending in the present application. Claims 1, 22, 32, 33, and 36 are independent claims. Support for the subject matter recited in claims 36-37 may be found at least on pages 19-21 of the specification and in FIG. 4. No new matter has been added. Claims 1-37 are respectfully submitted for consideration.

Rejection of Claims 1-35 under 35 U.S.C. §103(a):

Claims 1-35 have been rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,151,304 to Doshi et al. (Doshi '304) in view of U.S. Patent No. 6,430,150 B1 to Azuma et al. (Azuma '150) because, although it has been acknowledged that Doshi '304 "does not specifically disclose...switching the services to alternate paths in the event of link failure" (page 3, lines 2-3), it is alleged in the Office Action that "a person of ordinary skill in the art must know that the switching or routing had to be done in order to reroute the signals from service path to alternate path" (page 3, lines 3-5). It is further alleged in the Office Action that Azuma '150 "discloses the mesh optical network that switch service information to the alternate paths in the event of link failure" (page 4, lines 5-7). This rejection is respectfully traversed.

Claim 1, upon which claims 2-21 and 34 depend, recites a method for establishing a protection path for a failed link between first and second nodes in a mesh network, wherein a transfer of information from the first node to the second node is disrupted by the failed link. The method recited in claim 1 includes the step of establishing an alternate path from the second node to the first node via a destination-to-source communication channel, wherein the destination-to-source communication channel is established through one or more alternate nodes beginning at the second node and ending at the first node. The method recited in claim 1 also includes the step of executing a switch function at each of the alternate nodes traversed by the destination-to-source communication channel to allow source-to-destination information traffic flow from the first node to the second node along the alternate path defined by the destination-to-source communication channel. In addition, the method recited in claim 1 includes the step of switching the information traffic flow at the first node from the failed link to the alternate path when the destination-to-source communication channel is established at the first node.

Claim 22, upon which claims 23-31 depend, recites a network protection configuration for use in optical mesh network topologies to reroute optical signals from a failed transmission path to one or more alternate transmission paths. The network protection configuration recited in claim 22 includes an optical fiber network that includes a plurality of optical network nodes, each coupled to transmit and receive optical

signals carried on distinct wavelengths on optical fibers of the optical fiber network, the optical network further including a source node attempting to transmit the optical signals via the failed transmission path and a destination node detecting the failed transmission path. The network protection configuration recited in claim 22 also includes a communication channel established from the destination node to the source node to transmit a path failure notification, wherein a route established by the destination-to-source communication channel traversing one or more of the optical network nodes defines the alternate transmission path, and wherein the network nodes defining the alternate transmission path are switched in response to the path failure notification to facilitate source-to-destination transmission of the optical signals from the failed transmission path along the alternate path.

Claim 32 recites a method for establishing a protection path for a failed optical link between a source node and a destination node in an optical WDM mesh network, wherein a transfer of optical signals from the source node to the destination node is suspended by the failed optical link. The method recited in claim 32 includes the step of detecting the failed optical link at the destination node by recognizing the loss of optical power at destination node cross-connect ports. The method recited in claim 32 also includes the step of transmitting a link failure signal via a communication channel from the destination node detecting the failed link to the source node through one or more alternate nodes. Also, the method recited in claim 32 includes the step of configuring a cross-connect switch at each of the alternate nodes receiving the link failure signal,

including cross-connecting input ports to output ports of the cross-connect switch such that a source-to-destination protection path for transmission of the suspended optical signals is established as the link failure signal is transmitted from the destination node to the source node. Further, the method recited in claim 32 includes the step of switching the suspended optical signals from the failed optical link to the source-to-destination protection path upon receipt of the link failure signal at the source node, whereby the source-to-destination protection path is set up using a destination-to-source communication channel.

Claim 33, upon which claim 35 depends, recites a method for establishing a protection path for a failed optical link between a source node and a destination node in an optical WDM mesh network, wherein a transfer of optical signals from the source node to the destination node is suspended by the failed optical link. The method recited in claim 33 includes the step of detecting the failed optical link at the destination node by recognizing the loss of optical power at destination node cross-connect ports. The method recited in claim 33 also includes the step of transmitting a link failure signal via a communication channel from the destination node detecting the failed link to the source node through one or more alternate nodes. In addition, the method recited in claim 33 includes the step of configuring a cross-connect switch at each of the alternate nodes receiving the link failure signal, including cross-connecting input ports to output ports of the cross-connect switch such that a source-to-destination protection path for transmission of the suspended optical signals is established as the link failure signal is

transmitted from the destination node to the source node. Further, the method recited in claim 33 includes the step of switching the suspended optical signals from the failed optical link to the source-to-destination protection path upon receipt of the link failure signal at the source node, whereby the source-to-destination protection path is set up using a destination-to-source communication channel.

Among the advantages of the methods and configurations recited in the claims described above are that they provide for efficiently establishing protection routes in networks. The Applicant respectfully submits that Doshi '304 and Azuma '150, taken either individually or in combination, fail to disclose or suggest methods, devices, systems, and/or configurations that provide at least these advantages. Hence, at least in view of the above-described shortcomings of Doshi '304 and Azuma '150, the Applicant respectfully submits that the claims pending in the present application are patentable over Doshi '304 and Azuma '150, taken either individually or in combination.

Doshi '304 discloses a "source-to-destination direction" wherein "each intermediate node with available spar capacity allocates and reserves capacity in accordance with the request". (Column 15, lines 20-22). Doshi '304 also discloses selecting "the best of the paths with available capacity, and [sending] messages requesting the release of capacity on the remaining paths". (Column 16, lines 25-27).

However, Doshi '304 fails to disclose or suggest at least "establishing an alternate path from the second node to the first node via a destination-to-source communication channel" and "switching the information traffic flow at the first node from the failed link

to the alternate path when the destination-to-source communication channel is established at the first node", as recited in claim 1 of the present application. Doshi '304 also fails to disclose or suggest at least the "destination-to-source communication channel" that "defines the alternate transmission path" and switching "from the failed transmission path along the alternate path", as recited in claim 22. Further, Doshi '304 also fails to disclose or suggest at least the "destination-to-source communication channel" that "defines the alternate transmission path" and switching "from the failed transmission path along the alternate path", as recited in claim 32. In addition, Doshi '304 also fails to disclose or suggest at least "switching the suspended optical signals from the failed optical link to the source-to-destination protection path", as recited in claim 33.

Azuma '150 discloses a telecommunication network wherein "[e]ach node that receives the information relating to the failure determines alternative paths for bypassing the failure". (Abstract, lines 9-11). Azuma '150 also discloses that "service is switched to the alternative paths". (Abstract, lines 13-14).

However, Azuma '150, like Doshi '304, also fails to disclose or suggest at least the "destination-to-source" channels and paths recited in claims 1, 22, 32, and 33 and the switching to such channels and paths, as recited in these claims. In other words, Azuma '150 fails to address or overcome at least the above-discussed shortcomings of Doshi '304.

Applicant respectfully submits that, in direct contrast to Doshi '304 which, as shown above, discloses a "source-to-destination direction", claims 1, 22, 32, and 33 of

the present application recite an active alternative path from destination to source. Applicant respectfully further submits that, as discussed above, Azuma '150 fails to address or overcome at least these shortcomings of Doshi '304. At least in view of the above, Applicant respectfully submits that claims 1, 22, 32, and 33 of the present application are patentable over Doshi '304 and Azuma '150, taken either individually or in combination.

In addition to the above, Applicant respectfully submits that the destination-to-source approach recited in claims 1, 22, 32, and 33 of the present application offers clear benefits over source-to-destination approaches. For example, the destination-to-source approach reduces signaling, at least because this approach eliminates the need for sending messages requesting the release of capacity on the remaining paths, as disclosed in Doshi '304. Also, the destination-to-source approach recited in claims 1, 22, 32, and 33 of the present application allows for faster translation, at least because, when a source according to the claimed invention receives information that a link has failed, a new alternative path is already operational.

At least in view of the above, Applicant respectfully submits that claims 1, 22, 32, and 33 are patentable over Doshi '304 and Azuma '150, taken either individually or in combination.

As discussed above, claims 2-21, 23-31, and 34-35 all depend, either directly or indirectly, upon either claim 1, 22, 32, or 33 and thereby inherit all of the patentable distinctions thereof. Hence, Applicant respectfully submits that claims 2-21, 23-31, and

34-35 are patentable over Doshi '304 and Azuma '150, taken either individually or in combination, at least for the reasons discussed above in connection with claims 1, 22, 32, and 33.

New claim 36, upon which new claim 37 depends, recites a network node, and includes subject matter which is neither disclosed nor suggested in the cited prior art.

Applicant respectfully submits that all of the comments included in the Office Action have been addressed and that the rejection contained in the Office Action has been overcome. Hence, Applicant respectfully further submits that claims 1-37 are in condition for allowance. It is therefore respectfully requested that all claims pending in the present application be allowed, and that this application be passed to issue

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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